

Reply to Office Action dated August 16, 2006

### **REMARKS**

Claims 1-4, 6-9 and 11-14 are pending in this application. By this Amendment, claims 1-2, 4, 6-7, 9 and 11-14 are amended. Various amendments are made for clarity and are unrelated to issues of patentability.

The Office Action rejects 1-4, 6-9 and 11-14 under 35 U.S.C. §102(e) by U.S. Patent 6,304,996 to Van Stralen et al. (hereafter Van Stralen). The rejection is respectfully traversed with respect to the pending claims.

Independent claim 1 recites primarily decoding signals received from a transmission system and storing the primarily decoded signals in corresponding addresses of a memory. Independent claim 1 also recites secondarily decoding one of the primarily decoded signals stored in the memory according to a predetermined function, wherein the predetermined function indicates which signal of the primarily decoded signals is to be secondarily decoded. Independent claim 1 also recites storing the secondarily decoded signal in the same address as the address in which the one of the primarily decoded signals was stored, and repeating the secondarily decoding and the storing until all of the primarily decoded signals are secondarily decoded.

Van Stralen does not teach or suggest all the feature of independent claim 1. More specifically, Van Stralen merely discloses an interleaver 18 and a MAP decoder 14 for secondarily decoding. Van Stralen does not teach how the secondarily decoding is performed. However, independent claim 1 recites secondarily decoding one of the primarily decoded signals stored in the memory according to a predetermined function, and storing the secondarily decoded signal

Reply to Office Action dated August 16, 2006

in the same address as the address in which the one of the primarily decoded signals was stored. These features may enable the performance of interleaving, secondarily decoding and deinterleaving simultaneously. Embodiments may thereby implement secondarily decoding, interleaving, and deinterleaving simultaneously by changing a reading and storing pattern of the memory.

The Office Action states that Van Stralen discloses a simultaneous implementation of secondarily decoding, interleaving, and deinterleaving. However, Van Stralen does not disclose specific features that enable the performance of an interleaving, a secondarily decoding and a deinterleaving simultaneously. Van Stralen clearly does not suggest "secondarily decoding one of the primarily decoded signals...according to a predetermined function, wherein the predetermined function indicates which signal of the primarily decoded signals is the secondarily decoded."

Additionally, the Office Action cites Van Stralen's col. 3, line 6-col. 4, line 4 for the previously claimed features. This does not teach or suggest secondarily decoding one of the primarily decoded signals stored in the memory according to a predetermined function, wherein the predetermined function indicates which signal of the primarily decoded signals is to be secondarily decoded, and storing the secondarily decoded signal in the same address as the address in which the one of the primarily decoded signals was stored.

For at least the reasons set forth above, Van Stralen does not teach or suggest all the features of independent claim 1. Thus, independent claim 1 defines patentable subject matter.

Reply to Office Action dated August 16, 2006

Independent claim 6 recites primarily decoding signals received from a transmission system and storing the primarily decoded signals in corresponding addresses of a memory. Independent claim 6 also recites secondarily decoding one of the primarily decoded signals stored in the memory according to an equation  $E_i(k) = E(a(k))$ , wherein  $k = 1, 2, \dots, s$  (where  $s$  is a code block size,  $E(k)$  is a MAP decoded signal, and  $a(k)$  is an interleaving function defined by an interleaver of a turbo decoder). Independent claim 6 further recites storing the secondarily decoded signals in the same address as the address in which the one of the primarily decoded signals is stored and repeating the secondarily decoding and the storing until all of the primarily decoded signals are secondarily decoded.

For at least similar reasons as set forth above, Van Stralen does not teach or suggest all the features of independent claim 6. Thus, independent claim 6 defines patentable subject matter.

Independent claim 11 recites primarily decoding composite signals comprising systematic symbols  $x_k$ ,  $(n-1)^{\text{th}}$  iteration extrinsic information, and parity symbols  $y_k$ , and storing the primarily decoded composite signals in corresponding addresses of a memory. Independent claim 11 further recites secondarily decoding one of the primarily decoded composite signals stored in the memory according to a predetermined function to generate one of the  $n^{\text{th}}$  extrinsic information, wherein the predetermined function indicates which signal of the primarily decoded signals is to be secondarily decoded, and storing the secondarily decoded signals in the same address as the address in which the one of the primarily decoded signals was stored. Independent

Reply to Office Action dated August 16, 2006

claim 11 further recites repeating the secondarily decoding and the storing until all of the primarily decoded signals are secondarily decoded.

For at least similar reasons as set forth above, Van Stralen does not teach or suggest all the features of independent claim 11. Thus, independent claim 11 defines patentable subject matter.

For at least the reasons set forth above, each of independent claims 1, 6 and 11 defines patentable subject matter. Each of the dependent claims depends from one of the independent claims and therefore defines patentable subject matter at least for this reason. In addition, the dependent claims recite features that further and independently distinguish over the applied references.

### **CONCLUSION**

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Favorable consideration and prompt allowance of claims 1-4, 6-9 and 11-14 are earnestly solicited. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney at the telephone number listed below.

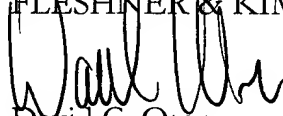
Serial No. **09/977,251**

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Reply to Office Action dated August 16, 2006

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,  
FLESHNER & KIM, LLP



David C. Oren

Registration No. 38,694

P.O. Box 221200

Chantilly, Virginia 20153-1200

(703) 766-3701 DYK:DCO/kah

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**Please direct all correspondence to Customer Number 34610**